



(11) Publication number : **0 468 715 A3**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number : **91306622.1**

(51) Int. Cl.⁵ : **G02B 6/28, H04B 10/18, G02B 6/14**

(22) Date of filing : **19.07.91**

(30) Priority : **27.07.90 US 559010**

(43) Date of publication of application :
29.01.92 Bulletin 92/05

(84) Designated Contracting States :
DE FR GB

(88) Date of deferred publication of search report :
19.08.92 Bulletin 92/34

(71) Applicant : **AMERICAN TELEPHONE AND TELEGRAPH COMPANY**
550 Madison Avenue
New York, NY 10022 (US)

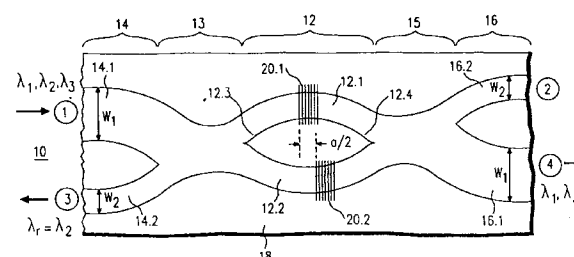
(72) Inventor : **Henry, Charles Howard**
52 Dogwood Lane
Skillman, New Jersey 08558 (US)
Inventor : **Shani, Yosi**
278 Gloucester Court
Aberdeen, New Jersey 07747 (US)
Inventor : **Kazarinov, Rudolf Feogor**
603 Stangle Road
Martinsville, New Jersey 08836 (US)

(74) Representative : **Watts, Christopher Malcolm Kelway, Dr. et al**
AT&T (UK) LTD. AT&T Intellectual Property
Division 5 Mornington Road
Woodford Green Essex IG8 OTU (GB)

(54) **Adiabatic reflection apparatus.**

(57) A wavelength selective structure (12) is coupled to an adiabatic Y-coupler (14) via a multimode section (13) which supports both symmetric and antisymmetric modes. One single mode branch (14.1) of the coupler converts guided light to a symmetric mode, whereas the other single mode branch (14.2) converts guided light to an anti-symmetric mode. The structure (12), which includes a pair of single mode waveguide arms (12.1, 12.2) coupled to the common section (13) and a reflection device (20.1, 20.2) (such as a grating or ROR) located in each arm, converts reflected light from a symmetric mode to an anti-symmetric mode and conversely. Applications described include a channel dropping filter and channel balancing apparatus for WDM systems, and a dispersion compensator for fiber optic systems.

FIG. 1





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 30 6622

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-4 142 775 (RAMASWAMY V. ET.AL.) * column 6, line 1 - line 17; figure 2 * ---	1,10	G02B6/28 H04B10/18 G02B6/14
A	US-A-4 900 119 (HILL K.O. ET AL.) * column 4, line 44 - line 68; claims 5,6; figure 4 * * column 5 - column 6 * * column 7, line 1 - line 32 * ---	1,2,12	
A	EP-A-0 282 237 (ATT) * column 1 - column 7; claims; figures 1-4 * ---	1,2,4,11	
A	EP-A-0 366 302 (PLESSY OVERSEAS LIM.) * column 5, line 7 - line 25; figures 1,3,5 * ---	1,3	
A	APPLIED PHYSICS LETTERS, vol. 50, no. 24, 15 June 1987, NEW YORK US pages 1710 - 1712; KAPON E. ET.AL.: 'Multichannel waveguide junctions for guided-wave optics' * the whole document * -----	1,3,5	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			G02B H04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 JUNE 1992	Examiner MATHYSSEK K.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 (3.82 (P0401))